

64



A

PHOTOGRAPHIC TOURIST'S EQUIPMENT;

OR,

How must I be Prepared before Starting?

BY

REV. PRECENTOR MANN, M.A.

London:

HAZELL, WATSON, & VINEY, LD., 1, CREED LANE.

A PHOTOGRAPHIC TOURIST'S EQUIPMENT;

OR,

HOW MUST I BE PREPARED BEFORE STARTING?

ATTENTION to details is essential to success in most things, but peculiarly so in Photography. Before the picture is mounted and becomes a finished thing of beauty, how many processes must have been successful! But this paper, as its title suggests, must only deal with the most preliminary of these; and I had better make it clear at the outset that my object in jotting down the following notes is to indicate simply and briefly the outfit which, from my own experience, I have found most useful when "on tour," and also to afford a few practical hints to the intending tourist which may be worth his notice, if he is not already an "old hand." Opinions about apparatus, as about methods of working, will always differ, nor is it desirable to establish any dead level of uniformity; for as long as we possess individuality we shall be sure to work out for ourselves our own ways of doing things. And yet we may often gain much help by comparing notes one with another. Some useful appliance to economise labour or improve results, some dodge for simplifying processes, is often thus culled from the experiences of a brother worker.

Now, I will explain at once that it is not my object to deal with hand-cameras. These are doubtless very attractive to tourists from their portability and ease of manipulation. For those who go in merely for views of the places they visit, for snap-shots of amusing scenes, etc., they are well enough, but for artistic picture-making they are, in my opinion, rarely successful.

Here, then, is my complete tourist's outfit, which I will proceed to describe—

(a) *Necessaries*.—Camera, and three double dark slides (or roll-holder), tripod stand and top, lenses, caps, and stops, focussing cloth, plates or films.

(b) *Useful adjuncts*.—Shutter, spirit-level, changing bag, view meter, compass, focussing glass, extra ground-glass screen, cases for slides, exposure note-book, red lamp, etc.

I. CAMERA.—So much has been written about cameras that I hesitate to add to it. It is easy to sketch the chief features of a perfect camera, but not always easy to pay for one. As with lenses, the cost is to some a consideration. Settle what you want your camera for; see all you can, compare and test them, if possible. The qualities of strength, lightness, and compactness are all good, but must differ in their value to different workers. One man lacks physical strength, but a lighter type of camera is safe in his hands, because he is careful and delicate of touch. Another is a rough handler, but he is strong, and can carry weight. Good work can be done with any good camera, and indeed there are many in the market. New-fangled dodges may be carried to excess, but all cameras of the better class should have a reversing back, focussing adjustment by rack and pinion or screw movement, double extension bellows, rising front, and swingback. A horizontal cross front is practically useless when the camera can be adjusted right or left on tripod top by loosening the screw; moreover, this latter plan does not strain the lens.

Opinions still differ as to square or kinnear form, and until last year (when the "Victoria" by Park was brought under my notice by a distinguished amateur) I was strongly in favour of the old pattern. In a short article which appeared in the *Amateur Photographer* of June 14th, 1889, the kinnear form is condemned by the writer. But with regard to the "Victoria," the chief objections there urged do not exist, and the others I have found of no practical importance. This camera is perfectly rigid, has no loose parts, and is quickly set up. The baseboard cannot interfere with the picture when short focus lenses are used, and if made (as in my case) with the four or five backmost folds of bellows square

pattern, there is no fear of "cutting off." It possesses all the necessary movements referred to above, and is a model of good workmanship, portability, and compactness. The weight of mine ($8\frac{1}{2} \times 6\frac{1}{2}$) is 5lb. 7oz. No doubt there are other cameras equally good, but after a month's tour with it abroad (when I took 150 negatives), I now desire nothing better. It is a good plan to mark upon your rising front the points to which it may be safely raised for vertical or horizontal pictures when using any given lens. On very dark subjects it is not always easy to see this.

2. DOUBLE BACKS.—Mine are of the book form, which I prefer, and are fitted with a hinged piece of blackened tin, the size of plate, which not only shuts off light between the plates, but also, by means of a spring, keeps each plate close in place. The shutters, being doubly hinged, fold back over the slide when drawn. It is a good plan to have your double backs made to fit into place with very little sliding, instead of pushing them through the whole length of groove. Apply blacklead on the tongues and grooves. It acts like oil on metal. I know nothing more calculated to provoke the temper than a slide which sticks when a good picture is focussed and the time is short. Carry your slides in cases made of some soft opaque material; this preserves from scratching, and keeps out light. Take with you a soft dusting brush (an oilman's paint brush will do), and apply this occasionally to the interior of both slides and camera bellows, for dust is a dire enemy. Before starting test both camera and slides for any possible leakage, in the usual way; also, by careful measurement, see that your focussing screen coincides with the position of the plate when slide is in place. Double backs should always be numbered—1 and 2, 3 and 4, etc.—also the cases into which they fit.

3. TRIPOD STAND.—I know nothing better than the "Ashford." It is strong, light, compact, and extremely rigid; its height is readily varied by thumb-screws. I always carry the tripod top screwed to the camera, there is then no risk of losing the screw; it may be taken off to "set up," though I never do so, preferring

to place camera on focussing cloth, laid on ground, and adjust legs.

4. LENSES.—For all practical purposes, I have found two lenses sufficient ; one of the rapid rectilinear type, the other a portable symmetrical. For my whole-plate camera the former is of 12-inch, the latter of 6-inch focus. They are of the "Optimus" brand, by Perken & Rayment, and, in my opinion, are unsurpassable. No doubt such makers as Ross, Dallmeyer, Wray, Beck, etc., turn out splendid lenses, but I doubt if anything better than the "Optimus" can be produced. It is a convenience that both hoods are of the same size, so that caps and shutter fit either lens, and that both lenses screw into the same flange, thus avoiding the necessity of "extra fracts" or "adaptors." The stops on my wide-angle lens rotate, but those of the rapid rectilinear (being loose) I have pierced near the top, and fastened together by a riveted pin. There is less liability thus to mislay or lose a stop, while they are also kept in their proper order. It is well to certify by careful measurement that the diameter of each stop bears its accurate ratio to the focal length of the lens, and to mark the stop clearly with its value. Makers usually do this, but I have found cases of error.

For all-round purposes the rapid rectilinear is undoubtedly the most useful lens. I use it for landscape, "genre" studies, architecture, and out-door portraiture. But I have found the wide angle very useful for street scenes, interiors of cathedrals, etc. Nearly all the pictures I made last season of the quaint old narrow streets of Brittany were taken with a wide-angle Optimus ; indeed, in such confined situations, I could not have succeeded without it. If a lens of still longer focus than the rapid rectilinear is wanted, the back combination of the doublet may be used ; but, being a single lens, it is, of course, not rectilinear.

5. FOCUSSING CLOTH.—After trying various materials, I strongly recommend a substance called "Victoria cloth," used by boot-makers in the manufacture of what are termed "cashmere" boots. It is quite opaque, strong, light, folds up small, and is pleasant to

the touch. To my mind, it is far preferable to the old-fashioned hot and bulky velvet, or the shiny rubber cloth which now finds favour. The size I use is $1\frac{1}{2}$ yard by 1 yard; it is well to have a cloth fully large. A few hooks and eyes judiciously attached may be useful in windy weather.

6. PLATES.—Nothing, I suppose, in the tourist's outfit exercises his mind more than the subject of plates. If they are bad, his labour is all in vain. And I know of but one way to ensure safety. Take with you as many plates as you are likely to want, and test them before starting. Go to a trustworthy dealer, and ascertain that he has in stock a quantity of the plates you require branded with the same number. Take a packet or two, and test them on various subjects. If they fulfil your requirements and please you, buy what you want right away, taking care that each packet is marked with the same number, to ensure their being of one and the same batch. It is folly to expect to obtain uniformly good plates as you travel from town to town. I have found Ilford's, and Fry's, and Thomas's, and Derwent's all excellent, and I have found some of them uncommonly bad. I have found Eastman's stripping films truly magnificent, but I came back from a holiday abroad one season with some fifty of them spotted and spoilt. *I did not test them before starting.* Last year I proved Derwent's to be admirable for cheap plates,—thickly coated, quite rapid enough for all ordinary work, and yielding brilliant negatives with pyro-soda or pyro-ammonia, their only fault being their dirty backs. I hear, however, that this brand of plates can no longer be procured; I believe it did not pay to make them. There seems to be a great want of such a cheap plate, reliable, and free from defects, like Ilford's, but more thickly coated, so as to ensure density, and to minimise halation, *e.g.*, such as results in a landscape with branches of trees standing out against a bright sky.*

* I have lately been experimenting with Thomas's "extra rapids," and find them excellent. They are very fast, free from defects, and give any density. Though hydroquinone is recommended, I find pyro-ammonia suits them admirably.

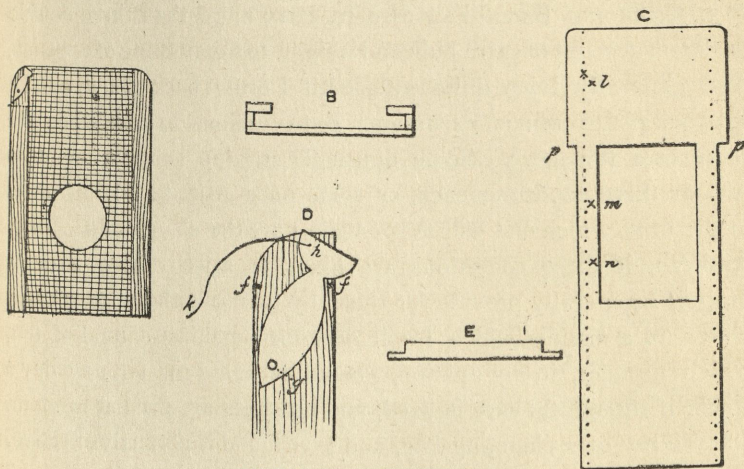
The recently introduced celluloid films are a convenience to those who desire to avoid weight, but their cost is at present against their popularity. The Eastman roll-holder, with its new transparent film, is a wonderful triumph of skill, and is now sure to become more than ever a favourite with tourists, though I confess I am still old-fashioned enough to be attached to glass plates and dark slides. One objection to films is the difficulty, if not impossibility, of varnishing. If makers would give us plates of an uniformly *thin* glass, their weight might be considerably reduced.

Having said something about absolute necessities, I now come to useful accessories.

I. SHUTTER.—Every photographer nowadays has his pet shutter, but all do not put it to like uses. Settle what you want it for. With many there is such a rage for speed, that if $\frac{1}{100}$ th to $\frac{1}{200}$ th of a second can be attained the shutter is pronounced perfection. But this is useless for picture-making. With the fastest plates such a speed can only yield black and white abominations, devoid of half-tones. The man who wants to make *pictures* with a shutter considers what is the *slowest* speed he can safely work at to ensure clearness of outline. For such a purpose I have found $\frac{1}{8}$ th to $\frac{1}{30}$ th of a second, all that is required. The old-fashioned "drop" is still the best shutter I know. The chief objections against it are its cumbersomeness and the liability of a long drop to get broken ; for a drop ought to be long to secure even illumination, and to regulate the speed on the principle of a falling body. Last spring, with the assistance of an amateur friend (a skilful turner and cabinet maker), I made a drop shutter after my own heart, which quite satisfies me still, except in the matter of size and portability. The length of the drop is 1 foot, with an aperture of $4\frac{1}{4} \times 2\frac{1}{2}$ inches, my largest stop being $1\frac{1}{2}$ inch in diameter. By adjusting the drop at its extreme height, so as to fall as much of its length as possible, quite sufficient speed is obtained for my own purposes, though of course it can be accelerated by elastic bands. On the other hand, a very slow exposure can be made by setting the drop to fall as short a distance as possible, and also inclining

the shutter diagonally, having fixed it on the hood of the lens so as to slope from left to right (or *vice versâ*), thus slowing its slide.

Of other shutters I can recommend the Thornton Pickard, with which I am now experimenting. It is well made, strong, compact, and free from vibration. Exposures from $\frac{1}{4}$ th to $\frac{1}{60}$ th of a second can be obtained. It is also most useful as a time shutter. In taking a street scene, for instance, with the pneumatic



SIMPLE DROP SHUTTER.

- A, Body of shutter, with circular aperture to fit lens.
- B, Section of ditto, showing groove.
- C, Drop, with long aperture, dotted lines indicating grooving.
- E, Section of ditto.
- D, Catch made of flat piece of brass, working on a screw at *g*, stopped by pins at *f f*, and perforated at *h* for silk thread.
- l, m, n*, Small pins by which the catch *D* holds up drop: *l* is for focussing, *m* for slower speed.
- p p*, These corners hold the drop when it falls, being stopped by two small pieces of wood, an inch long, fastened in the grooving at bottom of body of shutter.

ball in the hand the right moment can be waited for, and the two or three seconds given, without the eye being distracted by looking after the cap. The blind opens immediately on pressure of the ball, and closes as quickly when it is relaxed.

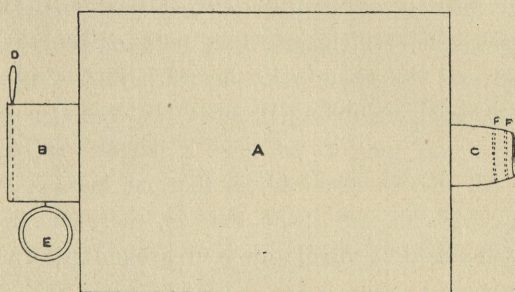
2. SPIRIT LEVEL.—Some prefer to have this attached to their camera upon the swingback; others have a second level fixed on the baseboard, to ensure their pictures being *horizontally* straight. Here, as with other like matters, one's ordinary practice results

often from a contracted habit. I prefer to carry a small pocket level, and use it for both these purposes. Even with landscape subjects I generally level, as it ensures one's pictures being quite straight, and so often saves trouble in printing or trimming. Wherever buildings come into a picture the level (or a plummet line) *must* be used on the swingback. He must have a remarkable eye who can safely dispense with it.

3. CHANGING BAG.—Few care to carry more than three double backs on account of extra bulk and weight, to say nothing of expense. And generally I am quite satisfied if I bring back six carefully exposed plates from an excursion. But occasions do arise when one requires a few more. Some unusually striking subjects tempt to two or three exposures each, or some once-visited field is fruitful in pictures, which one will never again have the chance of securing. And so, if these conditions are likely to arise during a day's outing, I generally provide for them by taking with me four extra plates, in a manner which I will describe—making a total of ten, which number, in my opinion, should be sufficient for any day's work, if thoughtful care is used, and no shots are fired at random. I made my own changing-bag, and have found it perfectly effective. Here is the method. Take two pieces of opaque black material 1 yard by $\frac{3}{4}$ yard, and two pieces of red twill same size. Of these construct an oblong bag, using the twill for lining. Sew up strongly all round the border with a double seam, leaving only an aperture at each end,—a small one in centre of right side, large enough to admit the hand, and a larger one on the left to insert dark slide and plates. Into these apertures fix *necks* about six inches long, made of the same materials, one for the slide to pass through, the other for the hand. Get some half-inch silk elastic and sew a couple of circular bands into the smaller neck, so as to clasp the wrist pretty closely. Attach another band to the *outside* of the larger neck near the centre, which may be passed over it, to clasp tightly, after the slide, etc., have been placed inside, but before the left hand is inserted. This neck may be also closed at its end by a running string, to be drawn tight for additional

security, or two elastic bands may be used. Some bags will be wanted made of stout brown paper, and large enough to carry two plates each; also some of a larger size, into which these will slip when filled; and finally, a third set made of black cloth or other opaque material, which serve for the outmost covering. The plan is similar to that adopted for the bromide papers. If the bags are strongly made, they will last a long time.

See that the paper is chemically harmless, and in packing place the plates back to back, face outwards. To change your plates, choose a spot in as weak a light as possible. It will need a little practice at first, as it is done entirely by *touch*. (1) Place one



HOME-MADE CHANGING BAG.

- A, Oblong bag.
- B, Neck for slides.
- C, Neck for right hand.

- D, Running string to draw tight.
- E, Ring of elastic to pass over neck.
- F F, Elastic band.

slide containing exposed plates, with one empty bag of each size, through larger neck on left side into changing bag laid flat before you. Pass elastic band over neck, insert left hand, draw string, and tuck the neck under coat sleeve. Then insert right hand on opposite side through neck, covering it also with sleeve, thus excluding possibility of light. Open slide, remove plates, place them in smaller bag, and this in larger. Withdraw and cover with cloth bag, leaving slide inside. It is well to number the outer paper bags, and also to place the *lower numbered* plate of each slide facing the *back* of the bag. Thus every plate is afterwards known. Now insert a pair of unexposed plates (and dusting brush, if thought necessary), and proceeding as before,

refill your slide. In this way I have changed scores of plates and never had a mishap. It takes some time to describe ; but a slide can be emptied and replenished in about three minutes, after a little practice. This changing bag may be used as a focussing cloth ; indeed, during one tour I used no other.

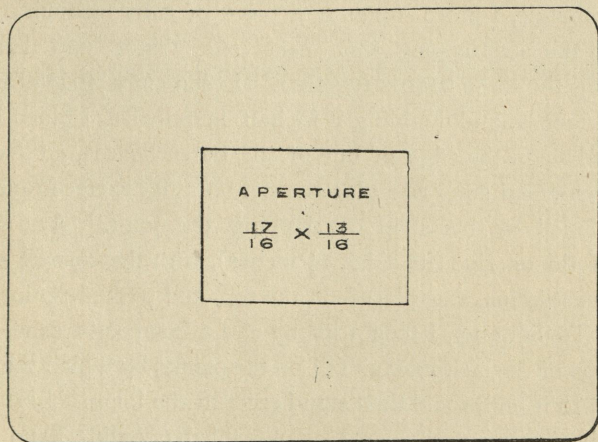
4. VIEW METER.—Whenever possible I visit the ground of operations with view meter, compass, and note-book, before taking the camera. It is disappointing, after a day's trudge with all the impedimenta, to secure nothing suitable. Besides, this plan of jotting down the particulars of subjects—how the light will fall at various hours, how much to take in and what to leave out, the possible introduction of figures, etc.—trains one to a more thoughtful selection, which is what most of us really want. There are several view-meters in the market ; but a very simple one may be made of an oblong piece of blackened tin or zinc, or even cardboard, an aperture of correct dimensions being cut in its centre. All that is required, is that on looking through it, when held a certain distance from the eye, the same field will be included which would be visible on your ground-glass screen with the lens you mean to use.

Say your camera is $8\frac{1}{2} \times 6\frac{1}{2}$, then the sides of the cut-out aperture must be as 17 is to 13 ; *e.g.*, $1\frac{1}{18} \times 1\frac{3}{18}$ inches, or $2\frac{1}{8} \times 1\frac{5}{8}$ inches, or other dimensions in like proportions. Focus a view on your screen, and ascertain the distance at which the meter must be held from the eye to include it. A piece of pencil or penholder may be cut to regulate this according to the lens. My own plan, however, is a little simpler. I close my right fist, place my meter between third and fourth knuckle, and the knuckle of forefinger just under right eye. By experiment with a few meters cut from card I discovered that the aperture had to be made $1\frac{1}{2}$ inch by a shade over $1\frac{1}{8}$ inch, to adapt itself to my rapid rectilinear lens of 12-inch focus. When placed between first and second knuckle the same meter takes in the field of my wide-angle lens. This is quite near enough for all practical purposes. It is only a piece of blackened tin $4\frac{1}{4} \times 3\frac{1}{4}$ inches, with the corners rounded. The

chief use of a view meter is to help one to judge how a picture will look when framed, so to speak, and isolated from its surroundings, and thus to get the best effect by studying its shape, the balance of its parts, what to include or omit, etc.

5. COMPASS.—In touring I always carry a map of the country, and a compass has often helped me much in finding my way about. But it is also useful for calculating the position of the sun at various hours of the day. With a "Photographer's clock" (described in the *Amateur Photographer*, May 24th, 1889) the tourist can determine this to a nicety.

6. FOCUSING GLASS.—This is useful for dark interiors. I have found it very difficult to focus accurately in some foreign cathedrals, illuminated only by deeply stained glass. Let the eyes get used to the light,—close them for some time,—then select some suitable bright spot as central as possible, and focus with the glass.



A SIMPLE VIEW METER.
Cut for Whole Plate.

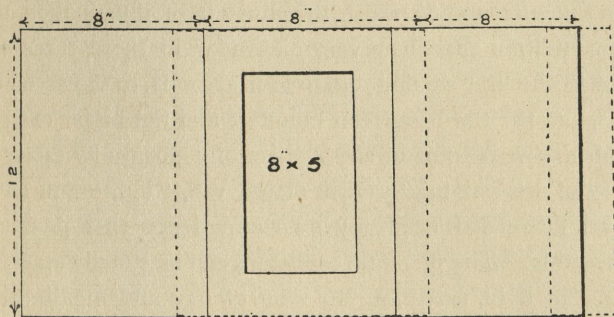
7. EXTRA GROUND-GLASS SCREEN.—It is always well to take one or two of these, in case of accidents. Moreover, those who want a fine surface had better make their own. It is easily done. Select a spoilt plate free from defects, and clean it. Procure some

of the finest "flour of emery" from a reliable chemist, and a block of lead, 2 or 3 inches in diameter, with a flat smooth surface. I got a circle of sheet lead cut, 4 inches in diameter, and fastened it to a round flat-bottomed 3-inch block of wood, shaped like a cake, turning the lead up $\frac{1}{2}$ an inch all round, and tacking it down. Having seen that the surface is even, lay the glass plate on a flat board, flood it with soap-and-water, place some powder on this, and work your block upon it with a circular motion. Examine from time to time, adding more emery and soap-and-water as required, till the whole surface is finely ground, and you will have a better screen than you can buy.

8. RED LAMP.—I know nothing better for travelling than the simple folding-lamp, made of boards and ruby medium, which packs flat. I procured three pieces of very stout cardboard 12×8 inches, cutting in one an aperture of 8×5 inches. Placing these flat on a table and close together, the last named being in the middle, I glued upon it a piece of ruby medium 12×10 inches, the overlapping inch each side (right and left) thus fastening the three boards together. I then cut a strip of medium 12×3 inches, and doubling it in half lengthwise, I glued it up to the bend upon the edge of one of the outer boards, so that when this three-sided lamp was placed erect on a flat surface rays would be excluded by this strip overlapping the joint. A triangular piece of tin or zinc (its sides $8\frac{1}{2}$ inches), with the corners snipped off for ventilation, was placed on the top, and packed up inside the lamp. To light up, I took a penny and a composite candle, let a few drops of the melting-wax fall on the penny, by which the candle adhered to it and would then stand erect in the lamp. Last season with this simple contrivance I always filled my slides, and packed away 150 exposed negatives, not one of which suffered the least fog.

9. EXPOSURE NOTE-BOOK.—No one deserves success who does not trouble to record the particulars of his exposures—otherwise, when the developing comes, he must needs be in the dark, and trust to guess-work. The sooner the student in photography realises that nothing is the result of chance the better. There is

a reason for everything, and a systematic record of the four factors which decide each exposure will help him wonderfully, by cultivating a habit of thoughtful comparison. I am not in favour of any slavish adherence to *tables*. But every photographer ought to know that the duration of his exposure must be determined by



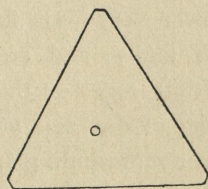
FOLDING RED LAMP.

Scale $\frac{1}{8}$ inch to the inch.

The dotted lines show the position of the ruby medium.

these four factors conjointly calculated: (1) Lighting of the subject; (2) Time of day and year; (3) Diameter of stop (in relation to focal length of lens); (4) Speed of plate.

I know there are some who tell us that the only correct way to judge of exposure is by gauging the amount of light as we see the



PLAN.

Triangular top, and sides, $\frac{1}{3}$ inches before corners are cut off.

picture upon the screen—the stop we intend to use being inserted. There may be those who can do this, but I much doubt it. They may persuade themselves that they are gauging the light, whereas they are really comparing the scene with some previous one which they have taken successfully under similar conditions. Can any man, for instance, accurately determine the relative value of the

light upon the screen of these three subjects without any calculation as to their essential difference, or comparison of former experiences?—(1) Wooded landscape scene, very dull day, $f/32$ stop; (2) Thickly wooded forest, bright day, $f/22$ stop; (3) Interior of well-lighted cathedral, $f/11$ stop. To many eyes, when well used to the surrounding light, the amount of illumination on the screen would not appear so very dissimilar in these three scenes. And yet to the first we might give four seconds, to the second forty seconds, and the third fourteen minutes, and not be far out. Now, although the weak point in any system of exposure by tables is the difficulty of determining the first factor, viz., "lighting of subject," yet I am persuaded from my own experience that practice will overcome this. The other three factors can be exactly ascertained. Variation in light, according to time of day and month of year, has been correctly tabulated, the relative value of stops to any lens can be put down exactly, and every worker ought by experiment to test the speed of the plates he uses. And so to beginners—indeed, to any but veteran workers—I consider such a system immensely valuable. Until I adopted it my exposures were more or less haphazard, and though now, from experience derived from the past, I often expose without it, there are times when I find exact calculation most useful. Cartwright & Rattray's little shilling books answer very well for recording exposures; they are furnished with tables, and are handy for the pocket. The principle is to multiply together the three numbers which represent the subject, time of day and year, and stop, and divide the product by the number representing speed of plate.

As I have hinted, if the subject number could be accurately put down, the right exposure would be a certainty, because the other factors are already fixed. A thoughtful comparison of various scenes in sunshine, or weather more or less clouded, will soon be the means of establishing one or two standards to work by. As a rule, I purposely over-expose slightly, and develop slowly and gradually; for an under-exposed negative is useless, while one four times over-exposed, or more, may often turn out well with care.

I ought not so to have digressed on "exposure," but to the tourist its importance is greatly increased if, as I recommend, he postpones development for his return, and so saves himself much inconvenience and annoyance. I never now develop while away from home, preferring to avoid the misery of making sloppy messes in my bedroom after a day's fatigue. It may be more satisfactory, however, to some to test an exposure here and there as a guide to their working. For this purpose I used to take a little pyro., soda, bromide, alum, and hypo. (all dry), with a couple of ebonite dishes, and mix as required. The washing is the worst business, but that can always be finished next day. Such development, however, must needs be at great disadvantage, and ought only to be indulged in for test purposes. Moreover, night work of this kind, if much of it is done, is not only tiresome and fatiguing—turning the pleasure of a holiday into a toil—but the practice also robs you of the much-anticipated pleasure of development in your own laboratory, with all your conveniences around you. I know no greater delight than this—after weeks, or months, perhaps, to bring out one after another the pictures of one's travels, and to conjure up the various scenes and incidents they recall.

And therefore, I say, pack away your exposed plates and develop at home. I often see queries about rapidity of exposures in various places (even in England), and fail to understand their purport. I believe there is practically no difference for exposures in the countries of Northern Europe; at least, I never myself make any such allowance. We know, of course, that weather and local features will influence the light anywhere. We are familiar with the gloom of river banks and forest glades, and the dazzling light reflected from the open sea. But we may get these in Scotland, or in France, or Germany, and exposures may be long or short accordingly. The observant eye is what we want. For photographing interiors of cathedrals, etc., I have generally used stripping films to avoid halation, but I can recommend a very simple plan of backing plates. Procure some walnut or oak stain in the dry powder, and mix with water to the consistency of cream. In the

dark-room lay this on thickly with a brush, being careful not to touch the film, set up to dry, and pack each plate carefully away in tissue paper ; or, if preferred, the operation may be performed while on travel. Take with you a broad soft camel's hair-brush for dusting plates before placing in the slides, also some opaque brown paper, cut into sizes, for wrapping round plates and boxes. Make a list in your note-book of your complete touring outfit, and before starting upon any excursion go carefully through it, and see that you are leaving nothing behind. It is mortifying, on arriving in the field, to discover, then too late, that something of importance has been forgotten.

And now let me describe the *carriage* of my equipment. I have no heavy leather case. Why add thus to weight ? When starting for an excursion I wrap my camera in the focussing cloth, and carry it with a hand-strap. My dark slides, extra plates, lenses, etc., fit into a light, strong, waterproof canvas bag, with straps to carry in the hand or place over the shoulders. I generally keep stops, level, and note-book in my pockets. The tripod stand, strapped up, is carried separately. Thus I divide my weight into three burdens, and find relief by changing about. The camera may sometimes be conveniently carried when "set up" by shortening the legs of the tripod. For any long journey my photographic outfit is packed away in a leather Gladstone bag, which I keep under my eye, and never allow in a luggage van. I place my store of plates at the bottom of a portmanteau. By declaring them at the customs, and showing my apparatus, I have never met with any difficulty on foreign tours.

When likely to remain some days in a place I look out for a suitable cupboard in my hotel, and beg the use of it. Last year, in Brittany, by thus asking for *un petit placard*, I generally got what I wanted, and by pinning up red paper over cracks I could change my plates even in daytime. It is well to take a supply of large steel pins with round heads for this purpose, such as ladies use for their hats, which may be easily stuck into wood by hand pressure. In this way it is generally quite possible

to exclude the light at night from bedroom windows. Draw the curtains, pin up focussing cloth, red paper, etc.—anything to keep the light out. Then choose the darkest corner of the room, and place a small table or washstand there. Upon this put all you require in an orderly manner—red lamp, slides, box for exposed plates, fresh plates, dusting brush, string, wrapping paper, pencil, etc., so that in the dim light each can be found when wanted.

You will require some chemically pure paper. Tissue, or white saxe or rive paper, used for sensitising, cut into pieces the size of your plates, will answer the purpose. Pack your plates in the empty plate boxes. Put them in pairs, with a piece of this paper between each couple, numbering them from the bottom; or better still, lay each plate face downwards on a sheet of paper, one above another. Then wrap them in brown paper, and secure each dozen with a string before placing in the box. Make a close fit to provide against shaking. Enwrap the box with stout brown paper, mark it clearly, and secure with string. I always write inside each box the numbers of the exposed plates in their order, answering to those in my note-book. Do not be induced to try what is so often recommended—viz., the packing of plates face to face, *with nothing between them*, especially if you are going to use continental railways. I have had several negatives damaged in this way by the friction, though I tied them up as tightly as was possible. Foreign porters are merciless, and hurl your baggage about regardless of the treasures within. There appear to be certain minute protuberances in the emulsion, or particles become detached, which rub the surface into holes. Some makes of plates may be less liable to this, but it is a risk I do not intend to run again, as it is so easily avoided. Only be sure of your paper, that it contains nothing to harm the film. I hear that some travellers change their plates under the bedclothes—not a luxurious method, but one I daresay quite feasible and efficient, though it lacks the advantage of the process being seen.

One parting word of advice. Never start upon a tour in a

hurry, if you can help it. Be systematic, and make a list of all you will require some days or weeks before you leave. See that everything is ready and in its place. Thus by careful attention to *details* you will, as I hinted at the commencement of this paper, be on the sure road to success.

